Women checking out 'Hotel'

By JAMES P. FORKAN

NEW YORK—Of the two new-for-fall ratings hits, CBS' "AfterMASH" has the broadest appeal, while ABC's "Hotel" owes its strength to women viewers.

ABC's "Hardcastle & McCormick" shapes up as the second-most-promising newcomer series, following "AfterMASH," in terms of male appeal. CBS' "Scarecrow & Mrs. King" emerges thus far as the only other contender among the new shows with female viewers.

Beyond those four shows, agency and advertiser executives perusing the latest fall demographic top 10 charts from A.C. Nielsen Co. covering Sept. 26 to Oct. 23 are finding slim pickings when it comes to new series.

"AfterMASH," clearly drawing from the popularity of "M*A*S*H," ranked among the top five in male and female viewers aged 18 to 34, 18 to 49, 25 to 54 and 12 to 17. Women 18 to 34 ranked that spinoff as No. 1.

"Hotel" benefited from having "Dynasty" as its lead-in. Both series ranked as big favorites among women 18 to 34, 18 to 49 and 50 and older. Income breakouts were not available yet.

"Hardcastle" was the only other fledgling series to make the top 10 in the three male breakouts from ages 18 through 54.

Women 16 to 34 put "Scarecrow & Mrs. King" into their top 10, as did women 25 to 54. In the youth market, "AfterMASH" was the sole freshman series in the top 10 for ages 12 to 17. Children two to 11 went not only for "Scarecrow" but also CBS' "Whiz Kids" and NBC's "Mr. Smith."

As for established programs, ABC's "Monday Night Football," despite some slippage in total homes (it was No. 26 in Nielsen homes data), is back near the top among males, right up there with "Hill Street Blues" among men 54 and younger and "60 Minutes" among men older than 50.

ABC's and NBC's Sunday movies were major lures for men 54 and younger, while NBC's Monday movies have become an attractive alternative to football among young women. NBC's Monday movie packet was No. 8 in the four-week homes data, compared with 18th for the NBC Sunday package and 21st for ABC's Sunday movies.

NBC's Sunday movie package contained "Women of San Quentin," "High School U.S.A." and the repeat theatrical "Bustin' Loose." Its Monday titles included "Policewoman Centerfold," "Adam" and "Sessions," all seen as female-appeal alternatives to ABC's Monday NFL telecasts.

ABC's Sunday movies included the made-for-tv "Making of a Male Model" and two new-to-network theatricals, "Heaven Can Wait" and "Nighthawks."

Nielsen's data through Dec. 19 showed NBC's "Hill Street Blues" had snared the top spot among men 18 to 49 and 25 to 54, with "Dynasty" on the top in those female demographics.

ABC's "Happy Days," tops among children a year earlier but pushed from this fall's top 10 by "The A Team," remains a hit at No. 9 with women 18 to 34.

"Magnum, P.I.," now more popular with males than females, has been surpassed in homes and demographic ratings by "Simon & Simon."

Looking at the top 10 in households for those same four weeks this fall, "AfterMASH," "Dynasty," "Dallas," "Simon & Simon" and "The A Team" led the way, with "Hotel," "Magnum," NBC's Monday movies, "60 Minutes" and "Scarecrow" rounding out the top 10.

CBS, traditionally seen as more appealing to older viewers than its rivals, has been the major proponent in recent years of the 25-to-54 demographic. That age group has stronger purchasing activity than the 18-to-49 bracket, David Poltrack, vp-tv research, CBS/Broadcast Group, has said.

He now is citing the Census Bureau's newly released 1980-81 consumer expenditure survey as the latest piece of evidence to support sponsor pursuit of the 25-to-54 bracket. The survey indicated that major spending power now is concentrated within the 35-to-54 segment, he said.

Top prime time tv series

Nielsen demographic ratings

(Sept. 26-Oct. 23)

Men 18-34

Program	Rating
1. Monday Football (ABC)	16.7
2. Hill Street (NBC)	16.6
3. AfterMASH (CBS)	16.1
4. A Team (NBC)	15.5
5. ABC Sunday Movie	15.0
5. NBC Sunday Movie	15.0
7. Fall Guy (ABC)	13.7
7. Cheers (NBC)	13.7
9. Magnum, P.I. (CBS)	13.5
10. Hardcastle/McC (ABC)	13.1
10. Simon & Simon (CBS)	13.1

Women 18-34

Program	Rating
1. AfterMASH (CBS)	21.5
2. Dynasty (ABC)	20.5
3. NBC Monday Movie	20.1
4. Dallas (CBS)	18.3
5. Knots Landing (CBS)	17.1
6. Hill Street (NBC)	16.3
7. Hotel (ABC)	15.9
7. Simon & Simon (CBS)	15.9
9. Happy Days (ABC)	15.5
10. Scarecrow/King (CBS)	15.4

Men 25-54

Program	Rating
1. Hill Street (NBC)	18.5
2. Monday Football (ABC)	18.4
3. A Team (NBC)	16.9
4. AfterMASH (CBS)	16.5
5. Simon & Simon (CBS)	16.0
5. Knight Rider (NBC)	16.0
7. ABC Sunday Movie	15.0
8. NBC Sunday Movie	14.8
9. Hardcastle/McC(ABC)	14.6
10. Fall Guy (ABC)	14.4

Women 25-54

Program	Rating
1. Dynasty (ABC)	23.7
2. AfterMASH (CBS)	21.6
3. Dallas (CBS)	20.6
4. Hotel (ABC)	20.4
5. NBC Monday Movie	19.6
6. Simon & Simon (CBS)	19.4
7. Fall Guy (ABC)	17.7
7. Scarecrow/King (CBS)	17.7
9. Hill Street (NBC)	17.4
10. A Team (NBC)	17.2
10. NBC Sunday Movie	17.2

Source: A.C. Nielsen Co.

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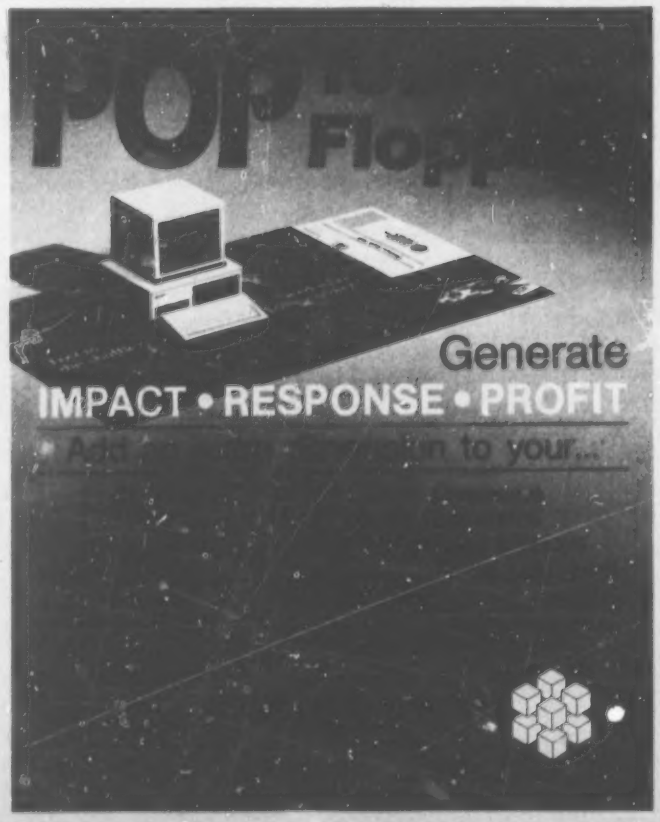

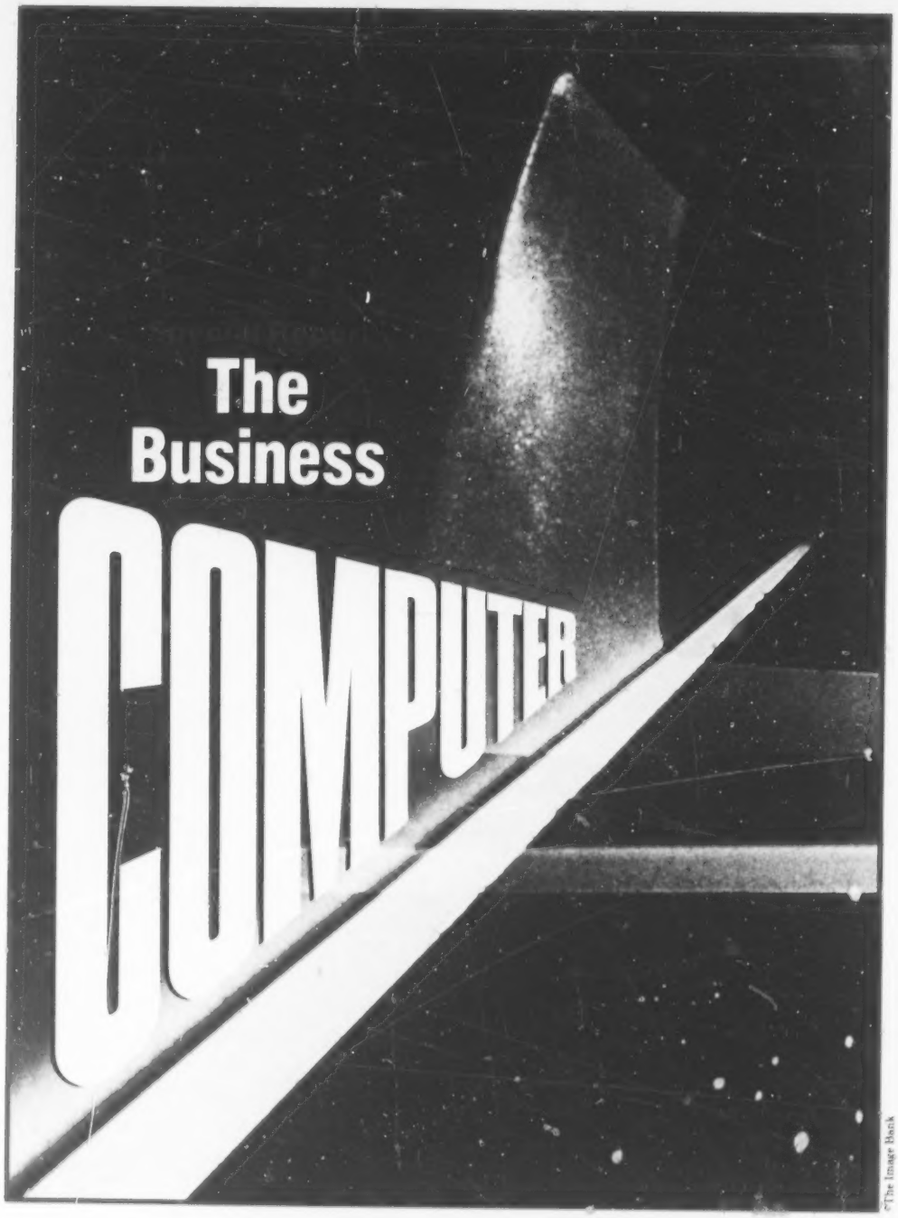

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From Apple to Wang, computers mean business

By Udayan Gupta

The universe of computers continues to be in a state of perpetual frenzy—one that repeats itself continuously. Each day brings a new player, a new product or a changing of the old order. Just four days in October can attest to that:

• **Tuesday, Oct. 4.** Wang Laboratories, Lowell, Mass., announces the launch of its Professional Image Computer, a personal computer that scans images and stores them in a computer memory. Wang also introduces software and other products aimed at making it easier for its computers to communicate with International Business Machines Corp. products.

• **Wednesday, Oct. 5.** Fortune Systems Corp., Belmont, Cal., announces that its board has forced Gary B. Friedman, its founder and president, to resign. Fortune, a marketer of computer systems for word processing and computer modeling of financial data, has been experiencing increased customer complaints about technical problems with its machines.

• **Thursday, Oct. 6.** Acorn Computers, a British manufacturer of microcomputers, introduces its BBC computer to the U.S. in Cambridge, Mass. Acorn's computer has had extraordinary success in the educational segment of the British market and will go head to head against the Apple and IBM Personal Computer.

• **Friday, Oct. 7.** Lotus Development Corp., San Francisco, marketers of the 1-2-3, one of the fastest selling software packages in the market today, announces that its initial public offering of stock had been immensely successful. It raised $46 million—$37 million for the company and $9 million for selling to shareholders. The 1-2-3 has the unique capability of combining spreadsheet, database and graphics in one program and can be used with the IBM PC as well as other 16-bit machines.

A new computer, a new player, an initial public offering and the ousting of an industry head—all regular occurrences these days in the computer era.

Indeed, the advent of the personal computer was expected to be the much needed boost that the computer industry required. And it was. Cashing in were companies such as Cupertino, Cal.-based Apple Computers and Tandy Corp. in Fort Worth, Tex., but with varying styles. Tandy, with its myriad Radio Shack outlets, flooded the country with its TRS-80 model, while Apple established a spanking new distribution network and dealer outlets.

Both were successful, so much so that they invited a host of new players, all eager to grab their share of the pie.

The mushrooming of companies in the industry was a phenomenon in itself. Earlier, such companies as International Business Machines Corp. and Digital Equipment Corp. had dominated the industry, commanding the capital as well as the manpower. However, with the spectacular success of entrepreneurs such as Apple's Steven P. Jobs and Atari's Nolan Bushnell, the control loosened. Many of the stars from the giants left to launch their own ventures, attracted by the potential of greater accomplishment and quicker riches.

"The entrepreneurs had nothing to lose," notes one industry observer, "If their companies succeeded, they would be at the top. If they failed, they could always return to the fold."

"It seems hardly a week goes by when one does not read in *Electronic News* that some top engineer from Hewlett-Packard, Digital Equipment, Intel, Tektronix or another top company has left to join a startup company," notes Michael Weisberg in Prudential-Bache's "High Tech Notes." "It is impossible to document, but we believe that the people drain is shifting the balance of power in product development. The advantage is moving away from big companies and toward small ones."

The other factor that shifted the balance toward the new company was the relative ease of raising capital. The growth of the venture capital environment and its unmasked sympathy toward high technology helped. Companies have been known to raise very large sums of money in the private market—often $15 million to $20 million—and even larger sums publicly.

Yet amidst all this growth, there remained a sense of confusion and bewilderment. Even though Apple reigned supreme, users and potential users had questions about the proliferation

(Continued on Page M-16)

Udayan Gupta is a New York-based contributing editor of Electronic Media, a sister publication to Advertising Age.

Programing in the human factors

By B.G. Yovovich

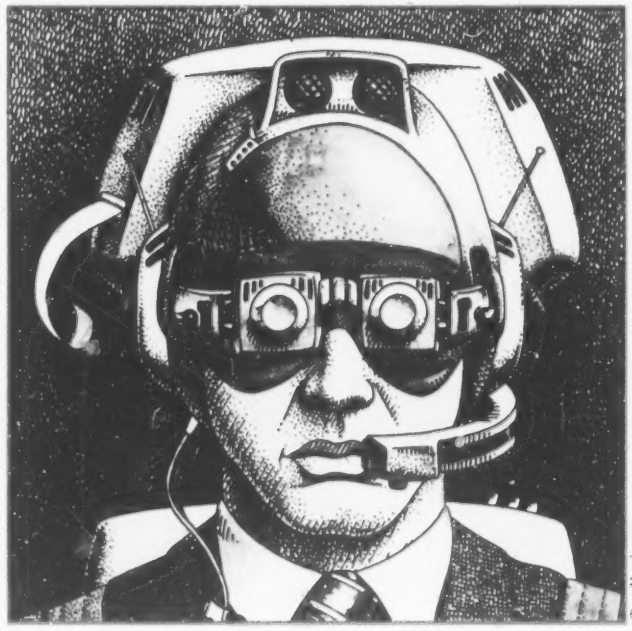
Technology is no longer enough. More and more, the success of a business computer system depends not so much on whether it has state-of-the-art technology as on how well it deals with the "human factors."

At their most mundane level, human considerations have led to such improvements as convenient detachable keyboards and video display terminals that minimize eyestrain and fatigue. The greater challenge, however, has been to tailor business systems to users' social and psychological needs, not just their physical ones.

"It's been said that there is a pretty good, though not perfect, match between the way a person's fingers work and the way that typewriters are designed," says John Gould, a researcher with International Business Machines Corp. "But there is not a very good match at all between the way people's heads work and what we show on the displays, and we think that is because we don't know enough about how people's heads work."

Several developments have prompted business computer manufacturers to become more interested in learning more about "how people's heads work," one of the most important being a change in the kinds of people using computers.

"The original users of computers were scientists and engineers who were intimately familiar with the internal workings of the machines," says Paul Green, a University of Michigan professor and chairman of the Human Factors Society's computer systems technical group.



Tom Herzberg

(The Human Factors Society is a Santa Monica, Cal.-based group that studies the impact of technology on the work environment.)

These scientists, says Mr. Green, "were very tolerant of messages that were obscure or of structures that didn't seem to make sense. Now that computers have been introduced into the office and other environments, they are being used by people who are not computer experts, who don't have the time, inclination or the expertise to delve into understanding the machines. They just want to get the job done, and the computer is a tool to do it."

And there is an economic shift as well.

"A couple of decades ago, an hour of computer time was very expensive compared to an hour of a person's time, and it was very inappropriate to worry about saving the person's time," says Mr. Gould. Since then, however, "computing has gotten cheaper and cheaper, especially when compared with the cost of people's time, and this has increased the incentives for making machines that enable individuals to perform more efficiently."

In some cases, business systems have substituted a "menu interface" for the traditional "command" approach to user-machine communication in which users needed to know specific command terms before they could use the computer.

The menu interface "gives users a number of choices, and when they make a choice, it takes them to the next step of the process," says Nancy Anderson, a University of Maryland professor and member of a National Academy of Sciences committee on human factors research. "The menu helps an inexperienced person."

The menu approach, however, has a drawback: "Sophisticated users often find menus very annoying," says Susan Dray, human factors specialist at Honeywell. Ms. Dray points out that the same individual is likely to change in sophistication and need for menus as he or she becomes more accustomed to working with the system.

As a result, a great deal of current research is directed at development of "adaptive interfaces" that can determine "what level of user it is dealing with and can adapt to the user's skills," says Ms. Anderson. She says most of the work so far has been on text-editing equipment and has sought to make it possible for experienced users to eliminate time-consuming features that they no longer need but might be useful to less experienced individuals.

One of the current hot areas of human factors research, for example, is the study of work patterns of middle managers and corporate executives.

"A major concern of ours for the last few years has been to figure out how to make tools that would be useful to this population of individuals that typically do not use computers in their work," says Mr. Gould of IBM. "These individuals have a lot of discretion in how they go about their work and what they use in their work and we knew that we would have to [develop products] that are easy to learn, easy to use and very useful. We knew that the only way to do that was to understand the user."

With this in mind, "we spent a great deal of time studying and trying to understand what these people do in the office," says Mr. Gould. He found a number of

B.G. Yovovich is a Chicago-based writer and a frequent contributor to Magazine.

Business

(Continued from Page M-9)

tion of systems and languages—none of which could address each other. There are those, such as Robert Rudkin of Dallas-based Diamond Shamrock, who believe that the absence of a dominant standard slowed down user acceptance and purchases.

It took the IBM Personal Computer to resolve the market's confusion. In one fell swoop it conquered the market for personal computers, vaulting to the leadership role occupied by Apple. "There is no doubt that IBM has come to dominate the microcomputer industry, and its dominance is growing," says Michele Preston, microcomputer analyst at New York's L.F. Rothschild, Unterberg, Towbin. "Hardware manufacturers must offer IBM compatibility." She points to Apple's Lisa, which recently adopted the software system used by IBM.

Similarly, a software company must also develop products that can be used on the IBM PC. Says Ms. Preston, "Knowing that a shakeout is under way, end users feel comfortable in committing to buy IBM personal computers long-term rather than products from a startup manufacturer of questionable staying power."

However, while the IBM PC rules supreme in the personal computer market, it still has a long way to go in capturing the business segment, says Carter Dunlap, technology analyst with San Francisco's Robertson, Colman & Stephens, investment banker. The needs of the business market will not be met by the 16-bit computer, but by the 32-bit and that is still at some what of a distance. "We're not into the real world of business computers as yet," says Mr. Dunlap. "But we're getting there."

Getting there may be at least another year away. Anindya Basu, a senior research associate with Link Resources, a New York-based consulting company, believes that the 32-bit supermicrocomputers should make their appearance by 1985.

This movement toward the business segment of the market should not be difficult to comprehend. A survey by *Dun's Business Monthly*, a publication of Dun & Bradstreet, found that 63% of companies with 500 or more employes now use microcomputers, most of which were purchased during the last year. By contrast, only 14.5% of the smaller companies—one to 19 employes—had taken the plunge. Still, the urge to get in on the craze is there. Of that smaller company group, 44% indicated that they planned to purchase a computer in the near future.

Link's Anindya Basu is quick to point out that the computer's potential market among small businesses is truly immense. Of the nation's 4.5 million small businesses, only 15% to 20% have computers in place, notes Mr. Basu. The remaining 80% to 85% forms a very alluring market.

The focus on business is going to accelerate even further, not merely because the market offers the greatest potential, but also because the rest of the computer industry is relatively stagnant.

The most devastated market is undoubtedly that of the home computer. The industry lost more than $500 million in the second quarter of this year, a performance that brought about mass personnel changes at Mattel Inc., Atari and a number of other companies. Texas Instruments, one of the biggest losers, held off on its TI 99/8, only to decide that it would not introduce it in 1983.

Coleco Industries, which had predicted that it would sell as many as 500,000 units of its Adam computer by Christmas, is still smoothing out the wrinkles.

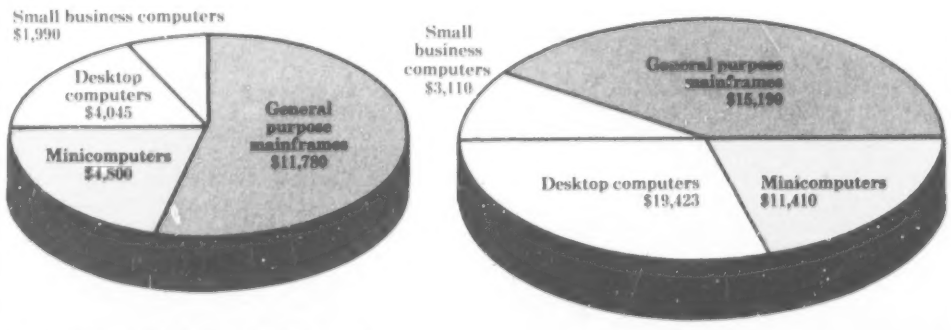
Indeed, the most excitement was around another IBM product, the Peanut, expected by the first week of November.

The higher end of the microcomputer market has not been without its problems either. Osborne, which stormed into the portable personal computer market, is in Chapter XI while Computer Devices, one of the portable computer pioneers, is also hemorrhaging.

There are others in trouble as well, Fortune Systems, which waltzed into the public view on the strength of a splashy $500 million public offering, now finds itself burdened with unsold inventory and a machine

Computer industry profile

Dollar value of computers shipped by U.S. manufacturers only ($ billion)



Source: International Data Corp., Framingham, Mass.

behavioral considerations that would have an impact on products and services aimed at this market. In particular, the research indicated that the managers were in their offices only half the time; spent less than one-third of their time reading or writing, and spent two-thirds of their time communicating with other people face-to-face or over the telephone.

In light of these findings, it became clear that, if a system were to be truly useful to managers, "it would have to have terminals that were available almost everywhere because they want to be able to communicate regardless of where they are," says Mr. Gould, "so we ended up using touch-tone phones as terminals rather than, for example, a cathode ray tube board.

"Because we learned that people most often want to communicate by voice and not by reading or writing, we developed a voice communication system, as opposed to a video terminal/electronic mail system."

According to Mr. Green at the University of Michigan, development processes of this sort are examples of the increasing use by computer companies of an "outside-in" approach to product development.

"The outside-in approach starts by thinking about who the user will be and what the user will see," says Mr. Green. "This is very different from the inside-out approach in which someone figures out a way to have the computer run as fast as it can and execute things as quickly as possible — then, as an afterthought, tacks on some operator considerations.

Let's get down to BASICs

By Ed Zotti

Small computers have been multiplying like frenzied gerbils in recent years, and so have computer languages, the stuff from which all computer programs are built. Lest you sound ignorant next time the cocktail-hour conversation turns to the latest in software, here's a brief rundown on some of the most popular languages.

ALGOL. ALGOrithmic Language. Granddaddy of 'em all, ALGOL has been around for years and is said to be particularly well suited to number-type applications. Numerous "improvements" on this program have been written over the years, some of them of dubious utility. However, one computer jock referred to ALGOL 60 (written in 1960, in case you wonder) as "a great improvement on all its successors."

APL. A Programming Language. APL was designed for mathematical applications. It uses a lot of symbols that permit complex instructions to be economically expressed. Statements that might take dozens of lines in other languages can be squeezed into one in APL. Widely available on mainframe computers, it is seldom used on microcomputers.

BASIC. Beginners' All-purpose Symbolic Instructional Code. BASIC, originally developed at Dartmouth College for instructional purposes, has become the language most widely used on microcomputers.

COBOL. COmmon Business Oriented Language. Originally developed by the Department of Defense, COBOL is used around the world for business applications such as accounting, bookkeeping and inventory control.

In itself an admirably no-nonsense language, COBOL unfortunately inspired would-be computer comedians to come up with numerous lame puns as names for their own languages, such as CUBOL (Computer Usage Business Oriented Language) and the unbelievably tortured SNOBOL (StriNg Oriented symBOlic Language). These in turn gave rise to such gems as LISP (LISt Processing), PRONTO (PROgram for Numerical Tool Operation) and MUMPS (Multi-User Multi-Processing System).

Tom Herzberg

FORTRAN. FORmula TRANslator. One of the earliest computer languages, FORTRAN was originally developed to make it easier to program complex scientific and engineering equations, although it's been used at one time or another for just about everything. Considered a bit old-fashioned by the avant-garde of the computer world, FORTRAN nonetheless has the advantage of being the closest thing the data processing biz has to a universal language.

Pascal. Named for Blaise Pascal, the famous French mathematician and philosopher. The comer among computer languages, Pascal may soon become more popular than BASIC. Powerful and versatile, it is said to be extremely easy to learn, although you'd never know it from looking at a program.

In a quote from a book on Pascal, it read: "FORTRAN has the rugged simplicity of a Model T Ford, and BASIC displays a childlike naivete, but Pascal exhibits the elegant simplicity that derives from economy and rightness of concept." Uh-huh.

PL/1. Programming Language 1 is a name universally regarded as an example of typical IBM arrogance, inasmuch as hundreds of languages preceded it. It must be admitted, however, that something called Programming Language 143 lacks something in the way of snappiness. PL/1 is IBM's attempt to combine the business capabilities of COBOL with the mathematical finesse of FORTRAN.

Ed Zotti is a Chicago-based free lance writer and a frequent contributor to Magazine.

plagued by technological problems. Victor Technologies and Vector Graphic, two of the early high fliers, are also weighted down by losses and market weakness.

In the minicomputer market, some of the spectacular early players—Prime Computer, Data General Corp. and Datapoint Corp.—are also severely tarnished. For them the market has shifted from new to replacement. The same is true of mainframes. Although there is some new activity, growth is relatively flat.

Clearly, amidst the dark skies and economic weakness, there is a shakeout going on. "The characteristics of survivors?" asks Mr. Dunlap of Robertson, Colman & Stephens. "They'll be the ones who have established a strong niche and who are defending it by a strong marketing effort."

"The future will belong to those companies that already have a foot in the door," says Eddie Brown of Brown Capital Management, an investment management company in Towson, Md. "Those computers that already have a large installed base will be the ones who sell the most."

Mr. Brown sees IBM, Digital Equipment, Hewlett-Packard, Wang Laboratories and Tandy among the survivors, though he is also enthusiastic about Solana Beach, Cal.-based Kaypro Corp. and Compaq Computer Corp. in Houston, two companies that manufacture IBM-compatible machines.

Mr. Dunlap emphasizes that there are too many companies in the computer environment. "It will boil down to five major companies and a few companies with a niche," he says. Among his candidates: IBM, American Telephone & Telegraph Co., Hewlett-Packard, Digital Equipment and—as niche players—Altos Computers and Convergent Technologies.

Link's Anindya Basu has a more elaborate list of survivors and champions. IBM, Hewlett-Packard and Digital Equipment are his logical choices, though he sees Tandy and Apple as probable major players.

New York-based Value Line, the investment advisory company, basically agrees with the analysts. IBM gets the highest rating for timeliness and safety. "Look for a 19% to 20% advance next year," advises Value Line about IBM. Other companies that Value Line is recommending include Apple and Wang. Value analyst Jerry Melin sees Digital Equipment, Convergent Technologies, Hewlett-Packard and Compaq doing well in the new environment.

IBM is on practically everyone's list. Indeed, there are those who argue that the company will set the tone for what will happen in the business computer environment. Carol Muratore of Prudential-Bache believes that one ripple effect of a "new IBM" will be to force its competitors to spend more on research, marketing and support in order to be able to compete effectively. Hewlett-Packard has already announced that it will permanently allocate a higher percentage of sales to marketing. Digital Equipment has made a similar announcement.

Not everyone believes, however, that IBM has the territory to itself. Tim Yankauer of New York-based Shearson/American Express says there is a lot for the others as well. "No reason to believe that IBM will have all the market.

There are others out there, others who are strong in their own right," says Mr. Yankauer, who believes that Burroughs Corp., Sperry Corp. and Digital Equipment will all be major players in this environment for some time to come.

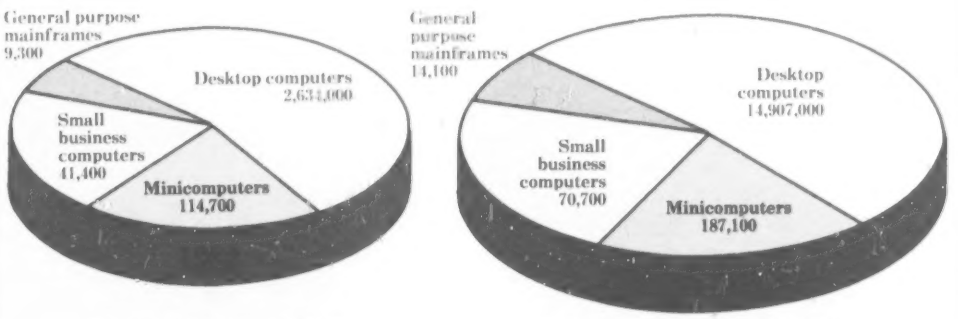
Right now, there are no limits on the industry, says Mr. Yankauer. "There's still going to be a tremendous proliferation of new products."

And as for the companies in trouble—the analysts mentioned Fortune Systems, Victor Technologies and Computer Devices—if they can't resolve their assortment of technological and compatibility problems, they will be forced to go belly up. "The market will penalize those who make promises but cannot deliver," predicts Tim Yankauer.

Whichever way you cut it, the computer industry is entering a new business environment. The success of the various manufacturers will depend on how well each manages to meet user needs.

Computer industry profile

Units shipped by U.S. manufacturers



Source: International Data Corp., Framingham, Mass.

Software programs pick up power

But for newcomers, the crowded field's a tough nut to crack

By Betsy Gilbert

A couple of years ago it was noted that in the rapidly growing business computer market, software—not hardware—seemed to be driving the industry. That observation is now regarded as the gospel.

Manufacturers can do only so much with machinery, but the strides that can be made with the programs that drive the machinery are infinite. Word processing, database management, financial spread sheets, graphics—they're in big demand; they're providing solutions to long-standing business problems and they're increasingly the reason people are buying computers. Or, as a button sported by the editorial staff of *LIST* magazine says, "Putting hardware ahead of software is nowhere."

"Business software is an incredibly lucrative market, but it is so crowded that only a small percentage of these new companies will make it."

That says it all, short and sweet, expressing the belief of thousands of software authors and publishers who are racing to enter the competition for business software dollars. It was recently estimated by Interactive TeleMarketing, a Lafayette, Cal., company specializing in software research and distribution, that more than 800 new programs are introduced to the marketplace each month. What the people behind those products are after is a portion of a $1 billion dollar worldwide software market, one that is expected to reach $7 billion within five years.

"Business software is an incredibly lucrative market, one that seems easy to get into, which is why we see so many products being introduced," said Bill Coggsmall, founder of the microcomputer software research company, Software Access International, which recently published a major study on the software market. "However, the market has become so crowded that only a small percentage of these new companies will make it, and an even smaller percentage will make it big."

The Software Access study is intended to define, explain and provide some structure to the highly fragmented microcomputer software industry. It describes the industry as being broad and shallow, one in which only a very few of the more than 5,000 software developers across the U.S. are capable of dominating.

"The names that keep cropping up in the industry, the leading contenders in the market, are the ones with plenty of money to spend promoting their products," said Mr. Coggsmall. "Those are the ones with the big sales. They might not be producing the most innovative packages and, in fact, many of them are actually republishers [companies that buy software, then repackage it and sell it under their names], but they have the name recognition."

Mr. Coggsmall is right on target. According to *ICP Software Business Review's* recent listing of the top 200 U.S. software product and service companies, the leaders (in sales) of this relatively new industry are the old guard of the computer arena. The top five are International Business Machines Corp., Control Data Corp. Digital Equipment Corp., Burroughs Corp. and NCR Corp. Not a small, hopeful startup company in the bunch.

However, the companies people in the computer industry are talking about aren't on this list. Companies like Lotus Development Corp., Context Management Systems, Software Publishing Corp. and Peachtree Software are the real innovators --the ones making people sit up and take notice.

"Think about this," suggested Stewart Alsop, editor of *Infoworld*, a microcomputer newsweekly that provides its readers with detailed software reviews in every issue. "The largest pure microcomputer software company in the world today—Microsoft—is only doing about $70 million in sales. The leaders are judged by sales figures. So it's going to be a long time before what many of us consider to be the innovators are included in the top 200 listings."

It's a tough nut to crack, this software business. With so many products competing for sales dollars, shelf space is becoming a scarce and valuable commodity. This is forcing publishers to seek alternatives to the more traditional marketing avenues—dealers and distributors—and look instead for more innovative methods of getting their products in the hands of computer users.

"The successful companies today realize that they need a big dose of marketing pizazz—they need to make a lot of noise," Bill Coggsmall explains, "and that's just what they're doing."

One of the ways they're accomplishing that feat is by hiring public relations and advertising experts to work inhouse to build an impressive company image. A second strategy involves plunking down lots of money in major advertising campaigns.

"Big promotional budgets are becoming more and more commonplace," says Brian Boyle, a marketing analyst specializing in software for Gnostic Concepts of Menlo Park, Cal. "The introduction of Lotus 1-2-3 is a prime example. Ads were everywhere, and the press blitz was just incredible."

That kind of activity takes a lot of money, invested on a continual basis. Bill Bastl, marketing director of Software Connections in Santa Clara, Cal., has been quoted as estimating that today's software company needs to add $100,000 every month to the promotional budget in order to maintain a steady level of recognition.

Where, one wonders, does all that money come from?

"Venture capital financing," maintains Mr. Alsop. "Software is *the* thing to invest in these days, and the venture capitalists are lining up to put money into software companies."

Mr. Alsop, who also edits a biweekly newsletter—"Softletter," which deals with trends and strategies in software publishing—observes a few companies still trying to "bootstrap" their efforts without outside financing, but he notes that it's getting increasingly difficult to do so.

"Today, you really need the money in order to get the name recognition that's so crucial to sales," he says. "It's a fact that the big companies with big budgets are getting a lion's share of attention, and that is simply the nature of the industry. This business is marketing driven, and in order to compete in it, you've got to have the promotional budget."

Some software houses are taking another approach. Rather than seeking out venture capital financing, they are allowing themselves to be acquired by larger companies. Recent examples making the news have been the acquisition of Minneapolis-based Open Systems by University Computing Corp. of Dallas, and that of Information Unlimited Software of Sausalito, Cal., by Computer Associates of Gerico, New York.

The acquisition of smaller, lesser-known companies by more established companies is apparently the coming thing, and why not? It's a simple, painless way of gaining recognition for the smaller company, recognition that might otherwise never come.

"I don't know that I'd call software acquisition a trend yet, but it is happening with greater regularity," said Louis Harm, editor of *ICP Software Business Review*. "A lot of vendors in order to offer their customer everything they need from one source are acquiring small software houses."

The problem Mr. Harm sees with acquisitions is in the maintenance of quality. While a company offering complete software lines might boast a large product portfolio, the collection is often a hodgepodge of packages that have no relation to one another.

"Software integration—that is, programs which were designed to work together—is lacking when any company begins building up a big software offering, based on acquisitions," Mr. Harm says. "Users today are becoming more sophisticated, and as a result they demand more for their money. One of the things they want is integration, and vendors who can't offer that aren't going to make the sales."

The fact remains, however, that many of the companies on ICP's annual list of the top software companies are large corporations, which have gotten into the business by acquiring smaller organizations.

"That's the way of this industry," Mr. Harm says. "Pioneers create a market, then other companies—those with a lot of money—come in and take over the market.

"Many of the really innovative names in the software business aren't on our list because the revenues just aren't there," he says.

Gnostic Concepts' Mr. Boyle puts it pragmatically: "You can't patent an idea, and what's hot in business software today—the word processing, spread sheets and databases—are ideas that are ripe for imitation. The things that make a personal computer personal, that make an individual really need the system, are the programs that offer solutions to certain problems. Those are ideas and they're going to take a lot of different forms."

Mr. Boyle points out that those ideas are taking shape all over the U.S., not just in California's Silicon Valley, where much of microcomputer software got its start.

"Massachusetts is making a name as a major software area," he said. "The Bellevue, Wash., area is also getting attention, as are Dallas and parts of Minnesota. Basically, wherever you find a good university, you'll find software being produced in the same vicinity, because that's where the thinkers are."

If the university-based thinkers are producing today's innovative software, what are they working on for tomorrow?

"Programs that do more for the user in the simplest way possible," Mr. Boyle says, "programs that offer solutions to problems without requiring too much from the user."

Specifically, he points to T.K.! Solver from Software Arts in Wellesley, Mass., the company that produced, then sold, the now legendary VisiCalc spread sheet program. T.K.! Solver, the name of the software program, is a big evolutionary step up from VisiCalc, says Mr. Boyle.

"This program is so simple," he said. "The user keys in the facts and figures and T.K.! Solver literally does everything else: The computations, the problem solving, everything. If you think of the spread sheet as automating arithmetic, then think of this program as doing the same for algebra."

If T.K.! Solver follows the lead of some of the other popular programs today, odds are we'll be seeing a lot of it in the pages of the magazines we read and slipping in between segments of our favorite tv shows. It all comes back to marketing.

"Business professionals are the ones buying computers today," said Ted Leonsis, editor of *LIST*, a monthly software resource magazine published by Redgate Publishing Co. "They don't know much about technology, but they do know that their business problems have solutions in the world of the computer and specifically in the world of software. The software vendors have to reach these people and in order to do that, they've got to stand out in what has become a huge crowd. If they can't be innovative in their marketing approaches, forget it."

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Leading independent software suppliers*

Company	1982 Total corporate revenues ($ millions)	Total software revenues ($ millions)
MSA (Management Science America	101	101
Informatics General Corp.	170	68
Applied Data Research	68	58
University Computing Co.	141	52
Cullinet	49	49
Computer Associates International	43	43
Cincom Systems	44	41
McCormack & Dodge Corp.	38	38
American Management Systems	70	36
Pansophic Systems	36	36

*Excerpted from the ICP 200—fifth annual survey of U.S. software product and service companies. Copyright © June 1983, International Computer Programs, Indianapolis, Ind.